

REMARKS

In response to the above Office Action, claims 1 and 13 have been amended to make it clear that the support material is pretreated with the at least two different organoaluminum compounds prior to contact “with both the transition metal compound (b) and the activator (c).” Support for this can be found on page 3, lines 4-6 or page 14, lines 25-26 as well as in the Examples. Example 1 discloses that the support material is first treated with triethylaluminum and then triisobutylaluminum before it is treated with trispentafluorophenyl (activator) and the transition metal complex A. Example 2 is similar except that the activator is an ionic activator (borate). As noted on page 3, lines 7-8, it was found that the resultant supported catalysts may be used to prepare polymers having broad molecular weight distributions and improved melt strengths.

In the Office Action the Examiner rejected claims 1-18 and 20 under 35 U.S.C. §102(b) for being anticipated by Jacobsen et al. (WO 97/43323), hereafter Jacobsen. In addition, claims 1-3, 5-9, and 13-21 were rejected under 35 U.S.C. §102(b) for being anticipated by Carnahan et al. (U.S. 6,475,945), hereafter Carnahan.

A significant feature of Applicants' invention, as set forth in claim 1, is that in the claimed supported catalyst composition comprising a dehydrated support material, a transition metal compound and an activator, the support has been pretreated “with at least two different organoaluminum compounds” prior to contact with both transition metal compound and the activator. Preferably, and as set forth in claim 4, the organoaluminum compounds are trialkylaluminum compounds. Claim 21 relates to the dehydrated support itself and recites that it has been treated with the at least two

different organoaluminum compounds prior to the addition of further catalyst components.

In the rejection based on Jacobsen, the Examiner references Example 7, which appears to describe, on page 101, the preparation of a terpolymer of ethylene using a supported cyclopentadienyl metallocene catalyst activated with a borate, wherein the support is treated with two different alkylaluminum compounds before contact with the titanium compound. The two compounds mentioned are "triethylaluminum" and "triethylaluminum" (Page 101, lines 11 and 17).

However, a closer reading of this Example will reveal that the latter, i.e., triethylaluminum, is a typographical error. More particularly, Example 7 describes in the beginning, the preparation of a mixture of triethylammonium tris(pentafluorophenyl) (4-hydroxyphenyl) borate in toluene and "trihexylaluminum" [sic trihexylaluminum] in toluene. (Page 101, lines 8-11). Further, that the "resultant mixture was stirred for 1 min at 90°C." (Page 101, lines 11-12). Then to a "silica slurry was added said mixture of triethylammonium tris(pentafluorophenyl) (4-hydroxyphenyl) borate and triethylaluminum which was at 90°C." (Emphasis added). (Page 101-lines 15-17). Clearly by reference to "said" mixture and that it was "at 90°C," the Example was necessarily referring to the mixture of the borate and trihexylaluminum; not a mixture of the borate and "triethylaluminum." This is further supported by the continued reference to "trihexylaluminum" in two more places in the Example in lines 18 and 21; not "triethylaluminum."

Thus it is submitted that a man skilled in the art would not have believed this Example taught the use of two different trialkylaluminum compounds, but only one;

namely, a trihexylaluminum compound. This is also apparent from a reading of Jacobsen as a whole because there is no disclosure anywhere in the document of the use of two different organoaluminum compounds in the pre-treatment of the silica. In particular, on page 47, line 24 - page 49, line 1 it is disclosed that the support is typically treated with an organometal compound which may be a trialkylaluminum compound.

Moreover, in this Example, even if it could be said that the support was treated with "two different organoaluminum compounds," it is not treated with the second one before it is treated with the activator, i.e., the borate, because the support was first treated with a mixture of trihexylaluminum and the borate.

In view of the foregoing it is submitted that claims 1-18 and 20 cannot be considered to be anticipated by Jacobsen. Its withdrawal as a ground of rejection under §102(b) is therefore requested.

With respect to Carnahan, the Examiner refers to Examples 1 and 3 as describing the contact of silica with two organoaluminum compounds. This is based on the premise that in Example 1 of Carnahan the MMAO is prepared by contacting MAO with another trialkylaluminum, for example, triisobutylaluminum. However, in column 1, lines 40-43 of Carnahan it is disclosed that the MMAO is made by the hydrolysis of a mixture of trimethylaluminum and triisobutylaluminum. Hence it is submitted that when the support is treated with MMAO, it is not being treated with "two different organoaluminum compounds" as claimed in claims 1, 13, and 21.

In addition, in Example 1 of Carnahan the activator - tris(pentafluorophenyl)boron - is added to a solution of the MMAO **before contact** with the support.

In contrast, in the present invention, the support is pretreated with at least two different organoaluminum compounds **prior to contact** with both the transition metal compound and the activator.

In Example 3 of Carnahan, the silica is treated with triethylaluminum and then tris(pentafluorophenyl)aluminum. In this Example, tris(pentafluorophenyl)aluminum is the activator. No further activator is used. Hence the support is only treated with a single organoaluminum compound **before contact** with the activator.

In the present invention the activator, for example a borate, is a separate component of the catalyst system to either of the two different organoaluminum compounds used to pretreat the support.

Accordingly, it is submitted that none of claims 1, 13, or 21 as well as claims 2-12, 14-18, and 20 dependent therefrom can be considered to be anticipated by Carnahan either. Its withdrawal as a ground of rejection under §102(b) is therefore requested.

With respect to the rejection of claim 19 under 35 U.S.C. §103(a) for being obvious over Jacobsen, while fluidized bed conditions are well known in the art, this claim depends ultimately from claims 1 and 13, so it is submitted it is patentable over Jacobsen for the same reasons expressed above with respect to claims 1 and 13.

It is believed claims 1-21 are in condition for allowance.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge
any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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